What is claimed is:

1. A nitride semiconductor light-emitting device comprising:

an active layer of a quantum well structure comprising a nitride semiconductor containing indium and gallium, and having first and second main surfaces;

a first p-type clad layer comprising a p-type nitride semiconductor containing aluminum and gallium, and provided in contact with said second main surface of the active layer;

a second p-type clad layer comprising a p-type nitride semiconductor containing aluminum and gallium, having a larger band gap than that of said first p-type clad layer, and provided on said first p-type clad layer; and

an n-type semiconductor layer provided in contact with said first main surface of the active layer.

2. The device according to claim 1, wherein said first p-type clad layer has a thickness with in a range of 10 angstroms to 1.0 μ m.

3. A nitride semiconductor light-emitting device comprising:

an active layer comprising of a quantum well structure comprising a nitride semiconductor containing indium and gallium, and having first and second main surfaces;

a first n-type clad layer made of an n-type

nitride semiconductor containing aluminum and gallium or of an n-type GaN, and provided in contact with said first main surface of the active layer, said first n-type clad layer having a thickness within a range of 10 angstroms to 1.0 μ m;

a second n-type clad layer comprising an n-type nitride semiconductor having a larger band gap than that of said first n-type clad layer, and provided on said first n-type clad layer; and

a p-type semiconductor layer provided in contact with said second main surface of the active layer.

4. The device according to claim 3, wherein said first n-type clad layer has a thickness within a range of 100 angstroms to 1.0 μ m.

5. A nitride semiconductor light-emitting device comprising:

an active layer of a quantum well structure comprising a nitride semiconductor containing indium and gallium, and having first and second main surfaces;

a first n-type clad layer made of an n-type nitride semiconductor containing aluminum and gallium, or of an n-type GaN, and provided in contact with said first main surface of the active layer;

a second n-type clad layer comprising an n-type nitride semiconductor having a larger band gap than that of said first n-type clad layer, and provided on said first n-type clad layer;

a first p-type clad layer comprising a p-type nitride semiconductor containing aluminum and gallium, and provided in contact with said second main surface of the active layer; and

a second p-type clad layer comprising a p-type nitride semiconductor containing aluminum and gallium, having a larger band gap than that of said first p-type clad layer, and provided on said first p-type clad layer.

6. The device according to claim 5, wherein said first p-type clad layer has a thickness within a range of 10 angstroms to 1.0 μ m.

7. The device according to claim 5, wherein said first n-type clad layer has a thickness within a range of 10 angstroms to 1.0 μ m.

8. A nitride semiconductor light-emitting device comprising an active layer of a quantum well structure comprising a nitride semiconductor containing indium and gallium and interposed between an n-type nitride semiconductor layer and a p-type semiconductor layer, said p-type semiconductor layer including a p-type clad layer provided in contact with said active layer, said p-type clad layer comprising a p-type nitride semiconductor containing aluminum and gallium and having a thickness within a range of 10 angstroms to 1.0 μ m.

9. The device according to claim 8, wherein said

n-type nitride semiconductor layer is made of an n-type GaN or an n-type nitride semiconductor containing indium and gallium.

10. A nitride semiconductor light-emitting device comprising an active layer of quantum well structure interposed between an n-type nitride semiconductor layer and a p-type semiconductor layer, said active layer comprising a nitride semiconductor containing indium and gallium, and provided with a well layer having a thickness of not more than 70 angstroms.

11. The device according to claim 10, wherein said active layer is of a multi-quantum well structure including a barrier layer having a thickness of not more than 150 angstroms.

12. A nitride semiconductor light-emitting device comprising an active layer of a quantum well structure having first and second main surfaces, and comprising a nitride semiconductor containing indium and gallium; and a first n-type clad layer comprising an n-type nitride semiconductor containing indium and gallium.

13. The device according to claim 12, wherein a total thickness of said active layer and said first n-type clad layer is 300 angstroms or more.

14. The device according to claim 12, further comprising an n-type contact layer formed of an n-type GaN and provided in contact with said first n-type clad layer or said first main surface of the active layer.

15. The device according to claim 12, further comprising a second n-type clad layer comprising an n-type nitride semiconductor containing aluminum and gallium, and provided in contact with said first n-type clad layer.

16. The device according to claim 12, further comprising an n-type contact layer formed of an n-type GaN and provided in contact with said second n-type clad layer.

17. A nitride semiconductor light-emitting device comprising an active layer of a quantum well structure having first and second main surfaces, and comprising a nitride semiconductor containing indium and gallium; and a first p-type clad layer comprising a p-type nitride semiconductor containing indium and gallium.

18. The device according to claim 17, wherein a total thickness of said active layer and said first p-type clad layer is 300 angstroms or more.

19. The device according to claim 17, further comprising a p-type contact layer formed of a p-type GaN and provided in contact with said first p-type clad layer.

20. The device according to claim 17, further comprising a second p-type clad layer made of a p-type nitride semiconductor and provided in contact with said first p-type clad layer.

21. The device according to claim 20, further

comprising a p-type contact layer formed of a p-type GaN and provided in contact with said second p-type clad layer.

22. A nitride semiconductor light-emitting device comprising:

an active layer comprising a nitride semiconductor containing indium and gallium, and having first and second main surfaces;

a first n-type clad layer comprising an n-type nitride semiconductor not containing aluminum, and provided in contact with said first main surface of the active layer; and

a p-type clad layer comprising a p-type nitride semiconductor and having a surface region, at least said surface region comprising a p-type nitride semiconductor containing aluminum and gallium, said p-type clad layer being provided in contact with said second main surface of the active layer.

23. The device according to claim 22, wherein said p-type clad layer is constituted by a first p-type layer comprising a p-type nitride semiconductor containing no aluminum and provided in direct contact with said second main surface of the active layer, and a second p-type layer comprising a p-type nitride semiconductor containing aluminum and gallium and provided on said first p-type layer.

24. The device according to claim 22, wherein said

active layer is of a quantum well structure.

25. The device according to claim 22, wherein a total thickness of said active layer and said first n-type clad layer is 300 angstroms or more.

26. The device according to claim 22, wherein a total thickness of said active layer, said first n-type clad layer and said first p-type layer of said p-type clad layer is 300 angstroms or more.

27. The device according to claim 22, further comprising a second n-type clad layer comprising an n-type nitride semiconductor containing aluminum and gallium, and provided in contact with said first n-type clad layer.

28. The device according to claim 22, further comprising an n-type contact layer formed of an n-type GaN and provided in contact with said first n-type clad layer.

29. The device according to claim 27, further comprising an n-type contact layer formed of an n-type GaN and provided in contact with said second n-type clad layer.

30. The device according to claim 22, further comprising a p-type contact layer formed of a p-type GaN and provided in contact with said p-type clad layer.

31. The device according to claim 22, further comprising, as a light reflecting film, a first

multi-layered film comprising at least two nitride semiconductor layers differing in composition, and provided on an outer side of said first n-type clad layer.

32. The device according to claim 22, further comprising, as a light reflecting film, a second multi-layered film comprising at least two nitride semiconductor layers differing in composition and provided on an outer side of said p-type clad layer.

33. The device according to claim 31, further comprising an n-type contact layer formed of an n-type GaN and provided in contact with said first multi-layered film.

34. The device according to claim 32, further comprising a p-type contact layer formed of a p-type GaN and provided in contact with said second multi-layered film.

35. A nitride semiconductor light-emitting device comprising an active layer of a quantum well structure comprising a nitride semiconductor; an negative electrode; a positive electrode; an n-type GaN contact layer provided in contact with said negative electrode; and a p-GaN contact layer provided in contact with said positive electrode.

36. A nitride semiconductor light-emitting device comprising an active layer having first and second main surfaces, and comprising a nitride semiconductor

containing indium and gallium; and a first n-type clad layer comprising an n-type nitride semiconductor containing indium and gallium, having a larger band gap than said active layer, and being provided in contact with said first main surface of the active layer.

37. A nitride semiconductor light-emitting device comprising an active layer having first and second main surfaces, and comprising a nitride semiconductor containing indium and gallium; and a first p-type clad layer comprising a p-type nitride semiconductor containing indium and gallium, having a larger band gap than said active layer, and being provided in contact with said second main surface of the active layer.

38. The device according to claim 36, further comprising a second n-type clad layer made of an n-type nitride semiconductor containing aluminum and gallium, having a larger band gap than that of the first n-type clad layer, and provided in contact with said first n-type clad layer.

39. The device according to claim 37, further comprising a second p-type clad layer comprising a p-type nitride semiconductor containing aluminum and gallium, having a larger band gap than that of the first p-type clad layer, and provided in contact with said first p-type clad layer.

40. The device according to claim 36, further comprising an n-type contact layer formed of an n-type

GaN and provided in contact with said first n-type clad layer or said first main surface of the active layer.

41. The device according to claim 38, further comprising an n-type contact layer formed of an n-type GaN and provided in contact with said second n-type clad layer.

42. The device according to claim 37, further comprising a p-type contact layer formed of a p-type GaN and provided in contact with said first p-type clad layer.

43. The device according to claim 39, further comprising a p-type contact layer formed of a p-type GaN and provided in contact with said second p-type clad layer.

44. The device according to claim 41, further comprising, as a light reflecting film, a first multi-layered film comprising at least two nitride semiconductor layers differing in composition and provided between said second n-type clad layer and said n-type contact layer, or in said n-type contact layer.

45. The device according to claim 44, wherein one of said two nitride semiconductor layers forming said first multi-layered film is a nitride semiconductor containing indium and gallium, or GaN; and the other is a nitride semiconductor containing aluminum and gallium.

46. The device according to claim 43, further

comprising, as a light reflecting film, a second multi-layered film comprising at least two nitride semiconductor layers differing in composition and provided between said second p-type clad layer and said p-type contact layer, or in said p-type contact layer.

47. The device according to claim 46, wherein one of said two nitride semiconductor layers forming said second multi-layered film is a nitride semiconductor containing indium and gallium, or GaN; and the other is a nitride semiconductor containing aluminum and gallium.

48. A nitride semiconductor light-emitting device comprising:

an active layer comprising a nitride semiconductor containing indium and gallium, and having first and second main surfaces;

a first n-type clad layer comprising an n-type nitride semiconductor containing indium and gallium, having a larger band gap than that of said active layer, and provided in contact with said first main surface of the active layer;

a first p-type clad layer comprising a p-type nitride semiconductor containing indium and gallium, having a larger band gap than that of said active layer, and provided in contact with said second main surface of the active layer;

a second n-type clad layer comprising an n-type

nitride semiconductor containing aluminum and gallium, having a larger band gap than that of said first n-type clad layer, and provided in contact with said first n-type clad layer; and

a second p-type clad layer comprising a p-type nitride semiconductor containing aluminum and gallium, having a larger band gap than that of said first p-type clad layer, and provided on said first p-type clad layer.

49. The device according to claim 48, further comprising a p-type contact layer formed of a p-type GaN and provided in contact with said second p-type clad layer, and an n-type contact layer formed of an n-type GaN and provided in contact with said second n-type clad layer.

50. A nitride semiconductor light-emitting device comprising an active layer comprising a nitride semiconductor containing at least indium and interposed between a first n-type clad layer comprising an n-type nitride semiconductor having a smaller thermal expansion coefficient than that of said active layer and a first p-type clad layer comprising a p-type nitride semiconductor having a smaller thermal expansion coefficient than that of said active layer, wherein said active layer is of a single-quantum well structure or of a multi-quantum well structure, thereby to emit a light of lower energy than the inherent band

gap energy of said nitride semiconductor forming said active layer.

51. The device according to claim 50, wherein said active layer comprises a well layer having a thickness of not more than 100 angstroms.

52. The device according to claim 50, wherein said first n-type clad layer is formed of an n-type $In_xGa_{1-x}N$ where $0 \leq x < 1$.

53. The device according to claim 50, wherein said first p-type clad layer is formed of a p-type $Al_yGa_{1-y}N$ where $0 \leq y \leq 1$.

54. The device according to claim 50, further comprising a second n-type clad layer comprising an n-type nitride semiconductor and provided in contact with said first n-type clad layer.

55. The device according to claim 54, wherein said second n-type clad layer is formed of an n-type $Al_aGa_{1-a}N$ where $0 \leq a \leq 1$.

56. The device according to claim 50, further comprising a second p-type clad layer comprising a p-type nitride semiconductor and provided in contact with said first p-type clad layer.

57. The device according to claim 56, wherein said second p-type clad layer is formed of a p-type $Al_bGa_{1-b}N$ where $0 \leq b \leq 1$.

58. The device according to claim 50, wherein said active layer is doped with a donor impurity and/or

an acceptor impurity.

59. A nitride semiconductor light-emitting device comprising a first n-type clad layer made of an n-type nitride semiconductor containing indium or of an n-type GaN; and an active layer comprising a nitride semiconductor containing indium, having a larger thermal expansion coefficient than that of said first n-type clad layer and provided in contact with said first n-type clad layer, wherein said active layer is of a single-quantum well structure or of a multi-quantum well structure, thereby to emit a light of lower energy than the inherent band gap energy of said nitride semiconductor forming said active layer.

60. The device according to claim 59, wherein a total thickness of said active layer and said first n-type clad layer is 300 angstroms or more.

61. A nitride semiconductor light-emitting device comprising an active layer comprising a nitride semiconductor containing indium; and a first p-type clad layer comprising a p-type nitride semiconductor containing aluminum, having a larger thermal expansion coefficient than that of said active layer and provided in contact with said active layer wherein said active layer is of a single-quantum well structure or of a multi-quantum well structure, thereby to emit a light of lower energy than the inherent band gap energy of said nitride semiconductor forming said active layer.

62. A nitride semiconductor light emitting diode device comprising:

a substrate;

an n-type layer formed of n-type GaN provided over said substrate;

an active layer of a single-quantum well structure or a multi-quantum well structure comprising InGaN and provided on said n-type layer;

a first p-type layer formed of p-type AlGaN and provided on said active layer; and

a second p-type layer formed of p-type GaN and provided on said first p-type layer.